



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/563,599	01/06/2006	Naohisa Higashiyama	283530US90PCT	3367

22850 7590 03/04/2010
OBLON, SPIVAK, MCCLELLAND MAIER & NEUSTADT, L.L.P.
1940 DUKE STREET
ALEXANDRIA, VA 22314

EXAMINER

ROSATI, BRANDON MICHAEL

ART UNIT	PAPER NUMBER
----------	--------------

3744

NOTIFICATION DATE	DELIVERY MODE
-------------------	---------------

03/04/2010

ELECTRONIC

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Notice of the Office communication was sent electronically on above-indicated "Notification Date" to the following e-mail address(es):

patentdocket@oblon.com
oblonpat@oblon.com
jgardner@oblon.com

Office Action Summary	Application No. 10/563,599	Applicant(s) HIGASHIYAMA ET AL.	
	Examiner BRANDON M. ROSATI	Art Unit 3744	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 12/24/2009.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-31 is/are pending in the application.
- 4a) Of the above claim(s) 16-31 is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-15 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☒ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 06 January 2006 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☒ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>1/6/2006 and 10/19/2009</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Election/Restrictions

1. Applicant's election with traverse of Species A in the reply filed on 12/24/2009 is acknowledged. The traversal is on the ground(s) that there is not search burden on the Examiner. This is not found persuasive because the only proper traversal to a Restriction Requirement is to state on the record that the Figures are NOT patentably distinct. Absent such an admission, the restriction requirement is deemed PROPER..

The requirement is still deemed proper and is therefore made FINAL.

2. Claims 16-31 are withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected Species, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 12/24/2009.

Specification

3. The title of the invention is not descriptive. A new title is required that is clearly indicative of the invention to which the claims are directed.

The following title is suggested: HEAT EXCHANGER WITH A
UNIFORMALIZATION MEMBER HAVING A DIVIDING FLOW CONTROL PLATE.

Claim Rejections - 35 USC § 102

4. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

A person shall be entitled to a patent unless –

(a) the invention was known or used by others in this country, or patented or described in a printed publication in this or a foreign country, before the invention thereof by the applicant for a patent.

Art Unit: 3744

5. Claims 1-4 and 8-15 are rejected under 35 U.S.C. 102(a) as being anticipated by Horiuchi (JP 2003075024 A).

Regarding claim 1, Horiuchi disclose in Figures 2-4 and 23, a heat exchanger comprising a refrigerant inlet-outlet tank (10), a refrigerant turn tank (50), a plurality of tube groups (P1 and P2), , the inlet-outlet tank having an interior divided by a partition wall (31), the turn tank having a uniformalizing member (i.e. passing holes) (71a) (see Abstract).

Regarding claim 2, Horiuchi disclose in Figures 2-4 and 23, the uniformalizing member comprising a divided flow control plate (70), dividing the tank (see Abstract).

Regarding claim 3, Horiuchi disclose in Figures 2-4 and 23, the divided flow plate has at least two passing holes (71a) (see Abstract).

Regarding claim 4, MPEP 2114 clearly states "While features of an apparatus may be recited either structurally or functionally, claims directed to an apparatus **must be** distinguished from the prior art in terms of structure rather than function. Because claim 4 fails to further limit the apparatus in terms of structure, but rather only recite further functional limitations, the invention as taught by Horiuchi is deemed fully capable of performing such function.

Regarding claim 8, Horiuchi disclose in Figures 2-4 and 23, all the structural features of the claim including the turn tank members being made of aluminum and brazed together (see Specification).

Regarding claim 9, Horiuchi disclose in Figures 2-4 and 23, all the claimed limitations including an interior dividing plate (41) in the inlet-outlet tank (see Figure 2).

Regarding claim 10, Horiuchi disclose in Figures 2-4 and 23, all the claimed limitations including the partition plate having holes (see Figure 3).

Art Unit: 3744

Regarding claim 11, Horiuchi disclose in Figures 2-4 and 23, all the structural features of the claim including the inlet-outlet tank having first and second members being made of aluminum and brazed together (see Specification).

Regarding claim 12, Horiuchi disclose in Figures 2-4 and 23, all the claimed limitations including the refrigerant in the inlet-outlet tank provided with an inlet and an outlet.

Regarding claim 13, Horiuchi disclose in Figures 2-4 and 23, all the claimed limitations including each group of tubes having at least 7 tubes.

Regarding claim 14, Horiuchi disclose in Figures 2-4 and 23 all the structural limitations of the claim. The applicant should be reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed (i.e. in a refrigeration cycle) does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here.

Regarding claim 15, Horiuchi disclose in Figures 2-4 and 23 all the structural limitations of the claim. The applicant should be reminded that a recitation with respect to the manner in which a claimed apparatus is intended to be employed (i.e. in a vehicle) does not differentiate the claimed apparatus from a prior art apparatus satisfying the structural limitations of the claims, as is the case here.

Claim Rejections - 35 USC § 103

6. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Art Unit: 3744

7. This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

8. The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

9. Claims 5-7 are rejected under 35 U.S.C. 103(a) as being unpatentable over Horiuchi (JP 2003075024 A).

Regarding claims 5-7, Horiuchi disclose in Figures 2-4 and 23 all the structural limitations of the claim except for the specific percentage of the dam portions (as per claims 5-7), the specific values for the combined areas of the holes (as per claims 5 and 7), and the specific percentage of the opening ratio (as per claims 6 and 7). Although the exact values are not disclosed, Horiuchi does, however, disclose a divided flow plate (70) in a heat exchanger turn tank. Therefore, the percentage of the dam portions, the specific values for the combined areas of the holes, and the specific percentage of the opening ratio are recognized as a result-

Art Unit: 3744

effective variable, i.e. a variable which achieves a recognized result. In this case, the recognized result is that by varying these parameters, the amount of refrigerant “turning” in the device can be increased or decreased, which would vary the overall amount of heat exchanger which can occur. Therefore, since the general conditions of the claim, i.e. that a divided flow plate (70) in a heat exchanger turn tank which is utilized to move fluid from one side to another, were disclosed in the prior art by Horiuchi, it is not inventive to discover the optimum workable range by routine experimentation, and it would have been obvious to one of ordinary skill in the art at the time of the invention to vary these parameters so as to obtain the maximum efficiency from the device.

Conclusion

10. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Ohashi (U.S. Pub. No. 2007/0044949 A1) discusses a hat exchanger.

Ohashi (U.S. Pub. No. 2007/0051504 A1) discusses a heat exchanger.

Higashiyama (U.S. Patent No. 7,635,019 B2) discusses a heat exchanger.

Higashiyama (U.S. Pub. No. 2007/0074861 A1) discusses a heat exchanger.

11. Any inquiry concerning this communication or earlier communications from the examiner should be directed to BRANDON M. ROSATI whose telephone number is (571)270-3536. The examiner can normally be reached on Monday-Friday 8:00am- 4:30pm EST.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Cheryl Tyler or Frantz Jules can be reached on (571) 272-4834 or (571) 272-6681.

Art Unit: 3744

The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

BMR
2/26/2010

/Cheryl J. Tyler/
Supervisory Patent Examiner, Art Unit
3744